

# ISOLASI, IDENTIFIKASI DAN UJI TOKSISITAS SENYAWA AKTIF FRAKSI METILEN KLORIDA DARI TANAMAN PURWOCENG ( *Pimpinella alpina* Molck )

Oleh:

Yayuk Astuti  
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## RINGKASAN

Tanaman Purwoceng (*Pimpinella alpina* Molck) selama ini telah dikenal sebagai obat penggugah gairah seksual (afrodisiak) dan obat peluruh air seni (diuretik). Walaupun telah dikenal, namun penelitian mengenai kandungan senyawa dan toksisitasnya belum banyak dilakukan. Pada penelitian sebelumnya telah dilakukan identifikasi kandungan kimia purwoceng fraksi non-polar, sedangkan penelitian terhadap fraksi semi polar belum dilakukan. Penelitian ini bertujuan untuk mengetahui kandungan senyawa yang terkandung dalam fraksi metilen klorida tanaman purwoceng serta toksisitas fraksi metilen klorida, etil asetat, n-butanol dan n-heksan.

Penelitian ini dibagi menjadi 2 tahap. Tahap pertama pemisahan, pemurnian dan identifikasi senyawa hasil isolasi. Isolasi senyawa dilakukan melalui metode maserasi dengan pelarut metanol yang dilanjutkan dengan fraksinasi menggunakan pelarut n-heksan, metilen klorida, etil asetat dan n-butanol. Isolasi senyawa dilanjutkan terhadap fraksi metilen klorida, sedangkan pemisahan dan pemurnian digunakan metode kromatografi kolom dan KLT preparatif. Identifikasi terhadap senyawa yang diperoleh meliputi uji golongan kimia serta analisis dengan GC-MS. Toksisitas senyawa-senyawa yang terkandung dalam fraksi metilen klorida, etil asetat dan n-butanol diuji menggunakan metode *Brine Shrimp Lethality Test (BSLT)* dan hasilnya diolah menggunakan metode *Finney* untuk mendapatkan harga  $LC_{50}$ .

Data hasil isolasi diperoleh 2 noda ( $F_x$ ,  $F_y$ ) dengan  $R_f$  0.07 untuk  $F_x$  dan 0.82 untuk  $F_y$ . Hasil GC-MS untuk  $F_x$  dengan  $T_R$  15.717 dan 17.608 diduga merupakan senyawa asam heksadekanoat dan asam oktadekanoat. Sedangkan untuk  $F_y$ , diperoleh senyawa benzil benzoat dengan  $T_R$  13.150. Dari hasil uji toksisitas diketahui harga  $LC_{50}$  fraksi metilen klorida, etil asetat, n-butanol dan n-heksan berturut-turut sebesar 18.76  $\mu\text{g/mL}$ , 18.76  $\mu\text{g/mL}$ , 14.08  $\mu\text{g/mL}$  dan 11.07  $\mu\text{g/mL}$ . Berdasarkan hasil analisis GC-MS terhadap senyawa hasil isolasi, diusulkan bahwa senyawa yang terkandung dalam ekstrak metilen klorida fraksi I adalah asam heksadekanoat, asam oktadekanoat dan benzil benzoat. Hasil uji toksisitas dengan BSLT menunjukkan bahwa keempat fraksi tersebut berpotensi sebagai antikanker.

## SUMMARY

Purwoceng (*Pimpinella alpina* Molk) is a plant that is widely used as both diuretic and aphrodisiac. Although it has been widely used, the researches of its chemical compound and toxicity has not been done yet. In previous research had been identified the chemical compound from non polar fraction of purwoceng, but neither had been the semi polar fraction. The purposes of the researches are to do the isolation, identification and toxicity test of the compound from semi polar fraction (methylene chloride) of purwoceng.

The research consists of two steps. In the first step covered isolating, purifying and identifying of resulted isolation compound. Compound isolation was done by maseration method using methanol which is continued by fractionation using n-hexan, methylene chloride, acetic ethyl and n-buthanol. Compound isolation was continued with methylene chloride fraction, while the separation and purification used preparative TLC and column chromatography methods. The identification of the resulted compound consist of phytochemistry screening and analysis by GC-MS. The compound activity which is contained in methylene chloride, ethyl acetat, n-buthanol and n-hexane fraction were tested using brine shrimp lethality test and the result are processed by the *finney* method to get the value of  $LC_{50}$ .

The result isolation obtained 2 stains ( Fx, Fy) with Rf 0.07 for Fx and 0.82 for Fy. GC-MS analysis for Fx with  $T_R$  15.717 and 17.608 was predicted to represent compound of heksadekanoat acid and oktadekanoat acid. While for Fy, was predicted to represent compound of benzil benzoat with  $T_R$  13.150. From result toxicity test was known value of  $LC_{50}$  of factions of methylene chloride , acetic ethyl, n-buthanol and n-heksane successively equal to 18.76  $\mu$  g/mL, 18.76  $\mu$  g/mL, 14.08  $\mu$  g/mL and 11.07  $\mu$  g/mL. Based on the analysis of GC-MS the isolation resulted compounds, it was suggested that the compounds contained in methylene chloride fraction I were hexadekanoic acid,, octadecanoic acid and benzyl benzoate. Based on  $LC_{50}$  value found that the all of fraction had potency as anticancer.

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